

Title (en)

Diene-based rubber/inorganic compound complexes, methods for producing the same and rubber compositions containing the same

Title (de)

Komplexe aus Dienkautschuk und anorganischer Verbindung, Verfahren zu ihrer Herstellung und Kautschukzusammensetzungen

Title (fr)

Complexes à base de caoutchouc diénique et composé inorganique, leurs procédés de production et compositions de caoutchouc

Publication

EP 1215226 B1 20060607 (EN)

Application

EP 01129554 A 20011211

Priority

- JP 2000377871 A 20001212
- JP 2001203925 A 20010704

Abstract (en)

[origin: EP1215226A2] The object of the present invention is to provide a method for producing a diene-based rubber/inorganic compound complex capable of allowing a silicic acid compound including silica and the like to be dispersed uniformly and allowing a reinforcing effect to be exerted sufficiently, as well as a complex produced by said method and a rubber composition containing said complex. A latex comprising a diene-based rubber such as styrene-butadiene copolymeric rubber, butadienestyrene-isoprene copolymeric rubber and the like is mixed with an aqueous solution of a silicate in which an alkaline salt of silicic acid such as sodium silicate, potassium silicate and the like is dissolved, and then the resultant mixture is further mixed with an aqueous solution of electrolytes containing Å1Ü a cationic substance which has an affinity to the diene-based rubber including a cationic polymer coagulating agent such as poly(meth)acrylic ester or the like and a cationic surfactant such as alkylamine acetate or the like and Å2Ü a salt of an acid such as hydrochloric acid, nitric acid and the like with a multivalent metal such as calcium, magnesium and the like, to form a co-coagulated material, which is followed by a drying, whereby obtaining a diene-based rubber/inorganic compound complex.

IPC 8 full level

C08J 3/16 (2006.01); **C08J 3/215** (2006.01); **B60C 1/00** (2006.01); **C08C 1/14** (2006.01); **C08K 3/00** (2006.01); **C08K 3/04** (2006.01); **C08K 3/34** (2006.01); **C08K 3/36** (2006.01); **C08K 5/00** (2006.01); **C08K 5/09** (2006.01); **C08K 5/54** (2006.01); **C08L 9/00** (2006.01); **C08L 21/00** (2006.01)

CPC (source: EP US)

B60C 1/0016 (2013.01 - EP US); **B60C 1/0025** (2013.01 - EP US); **C08J 3/215** (2013.01 - EP US); **C08K 3/013** (2017.12 - EP US); **C08J 2321/00** (2013.01 - EP US)

C-Set (source: EP US)

C08K 3/013 + **C08L 21/00**

Cited by

CN105873999A; EP3029099A1; CN100406506C; FR3003864A1; US10086651B2; WO2014161756A1; WO2013120502A1

Designated contracting state (EPC)

DE ES FR GB IT

DOCDB simple family (publication)

EP 1215226 A2 20020619; **EP 1215226 A3 20030813**; **EP 1215226 B1 20060607**; DE 60120332 D1 20060720; DE 60120332 T2 20070606; ES 2266079 T3 20070301; JP 2002241507 A 20020828; US 2002111418 A1 20020815; US 6740704 B2 20040525

DOCDB simple family (application)

EP 01129554 A 20011211; DE 60120332 T 20011211; ES 01129554 T 20011211; JP 2001203925 A 20010704; US 1173901 A 20011211